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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/602,464	06/23/2003	Masahiro Kawaguchi	1232-5069	3975
27123 7590 07/17/2007 MORGAN & FINNEGAN, L.L.P. 3 WORLD FINANCIAL CENTER NEW YORK, NY 10281-2101			EXAMINER FORMAN, BETTY J	
			ART UNIT 1634	PAPER NUMBER
			MAIL DATE 07/17/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/602,464

Applicant(s)

KAWAGUCHI, MASAHIRO

Examiner

BJ Forman

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 May 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11, 16 and 17 is/are pending in the application.
- 4a) Of the above claim(s) 4-11 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 16 and 17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application
- ☐ Other: _____

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DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 8 May 2007 has been entered.

Status of the Claims

2. This action is in response to papers filed 8 May 2007 in which claim 1 was amended. The amendments have been thoroughly reviewed and entered.

The previous rejections in the Office Action dated 8 November are withdrawn in view of the amendments. New grounds for rejection are added. Applicant's arguments have been thoroughly reviewed but are deemed moot in view of the amendments, withdrawn rejections and new grounds for rejection.

Claims 4-11 are withdrawn from consideration.

Claims 1-3 and 16-17 are under prosecution.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1-3, 16-17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1-3, 16-17 are indefinite in Claim 1, lines 5-8 for the recitations "said surface which immobilized said probes of said substrate" and "so as to apply said liquid to said each

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probes". The recitations are indefinite because they probe lack proper antecedent basis in the claim. It is suggested that the claim be amended to properly depend from the preceding passages of the claim e.g. replace "said surface which immobilized said probes of said substrate" with "said probes immobilized on said surface" and replace "so as to apply said liquid to said each probes" with "so as to apply said liquid to each of said probes".

Claims 1-3, 16-17 are indefinite in Claim 1, lines 15-16 for the recitation "said temperature control block located on a back of said substrate" because the recitation lacks proper antecedent basis in the claim. It is suggested that the claim be amended to properly depend from the preceding passages of the claim e.g. replace "said temperature control block located on a back of said substrate" with "said temperature control block, which is located on a back of said substrate"

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-3, 16-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kajiyama et al (U.S. Patent No. 6,346,383, issued 12 February 2002) in view of Samarov (U.S. Patent No. 5,146,981, issued 15 September 1992).

Regarding Claims 1 and 17, Kajiyama et al teach a device comprising a reaction unit having a nucleic acid probe array (1) having nucleic acid probes immobilized on a surface of the array, a cover (27), for forming a chamber with the surface so as to permit liquid to fill the chamber and contact the probes and a heat conduction member in contact with the substrate for thermal diffusion in the liquid (4/5 island w/heater circuit)(Column 8, lines 44-67 and Fig.

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1). Kajiyama et al further teach the device comprising a temperature control block (mesh structure, 41) for controlling temperature of the heat conducting member, wherein the heat conducting member include projections (#4, islands, also numbered 21, Fig. 4), which is reasonably interpreted as a "leg" and wherein the temperature control block is in contact with the substrate (Fig. 1-5). Kajiyama et al also teach the device wherein the projecting islands (21, Fig. 4) are surrounded by a mesh structure (41) that provides an insulating matrix of holes through which the islands project (see back side of substrate illustrated in Fig. 4A).

The claim defines the leg of the heat conducting member as being adapted for insertion into and in close contact with one of the holes of the temperature control block. Kajiyama et al does not teach that the substrate and probe island are inserted into or removable from the insulating mesh structure.

However, removable matrices for providing insulation between heated regions (i.e. heat sinks) were well known and routinely practiced in the art of heating arrays as taught by Samarov. Samarov teach that heat sinks are preferably removable from the heat source because cyclic heating and cooling of the heat sink and substrate, which have different coefficients of thermal expansion will result in stress-related fractures and further the removable heat sink facilitates repair of the device (Column 4, lines 6-12). Therefore, it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to modify the device of Kajiyama et al by making the substrate/islands removable from the mesh structure. One of ordinary skill in the art would have been motivated to do so with a reasonable expectation of success based on the potential for stress-related fractures and for the benefit facilitating repair as taught by Samarov (Column 4, lines 11-12).

Regarding Claim 2, Samarov teach the temperature control block having through holes (#34) which could easily be adapted to receive a microtube, if experimenter so desired. It is noted that the "adapted to" recitation does not define a size or dimension of a region for

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receiving the microtube. Therefore, given the broadest reasonable interpretation of the claim, the through hole of Samarov is encompassed by the broadly defined adaptation.

Regarding Claims 3 and 16, Kajiyama et al teach the device wherein the heat conducting member is formed of a metal i.e. heater circuit of electrodes & wires (Column 13, lines 1-52).

Conclusion

7. No claim is allowed.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to BJ Forman whose telephone number is (571) 272-0741. The examiner can normally be reached on 6:00 TO 3:30.

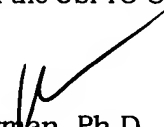
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ram Shukla can be reached on (571) 272-0735. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to (571) 272-0547.

Patent applicants with problems or questions regarding electronic images that can be viewed in the Patent Application Information Retrieval system (PAIR) can now contact the USPTO's Patent Electronic Business Center (Patent EBC) for assistance. Representatives are available to answer your questions daily from 6 am to midnight (EST). The toll free number is (866) 217-9197. When calling please have your application serial or patent number, the type of document you are having an image problem with, the number of pages and the specific nature of the problem. The Patent Electronic Business Center will notify applicants of the resolution of the problem within 5-7 business days. Applicants can also check PAIR to confirm that the problem has been corrected. The USPTO's Patent Electronic Business Center is a complete service center supporting all patent business on the Internet. The USPTO's PAIR system provides Internet-based access to patent application status and history information. It also enables applicants to view the scanned images of their own application file folder(s) as well as general patent information available to the public.

For all other customer support, please call the USPTO Call Center (UCC) at 800-786-9199.


BJ Forman, Ph.D.
Primary Examiner
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July 16, 2007